

CLAIMS

What is claimed is:

1. A closure for maintaining pressure against a peelable seal affixed to a container lip during a sterilization process, comprising:
 - a closure having a top wall and an annular skirt depending from said top wall;
 - a retaining structure extending radially inward from an inner surface of said annular skirt;
 - a reseal layer adjacent said top wall of said closure above said retaining structure; and,
 - an inner seal positioned above said retaining structure abutting a lower surface of said reseal layer, said reseal layer rotatable relative to said closure.
2. The closure of claim 1, said reseal layer being a flexible material.
3. The closure of claim 1, said reseal layer being selected from the group consisting of a silicone-based material, urethane, rubber, thermoplastic elastomers, or a combination thereof.
4. The closure of claim 1, said reseal layer formed of rubber.
5. The closure of claim 1, said reseal layer formed of rubber and synthetic olefin rubber.
6. The closure of claim 1 further comprising a slip layer affixed to said reseal layer.
7. The closure of claim 6, said slip layer formed of a polymeric material on a lower surface of said reseal layer.
8. The closure of claim 1, said reseal layer having a polymeric slip layer affixed to an upper surface thereof.

9. The closure of claim 1, said retaining structure being an interrupted bead circumferentially extending about an inner surface of said annular skirt.
10. The closure of claim 1, said reseal layer having a polypropylene slip layer coating affixed to a lower surface adjacent said inner seal.
11. The closure of claim 1, said reseal layer having a polypropylene slip layer affixed to an upper surface thereof.
12. The closure of claim 1, said reseal layer having a slip layer affixed to an upper surface and a lower surface.
13. The closure of claim 1 wherein a coefficient of friction between said inner seal and a container lip is greater than between said inner seal and said closure top wall.
14. The closure of claim 1, a slip layer affixed to an upper surface of said reseal layer containing at least one lubricant.
15. The closure of claim 1, an inner surface of said top wall having a stepped portion depending therefrom.
16. The closure of claim 1, said closure formed of a material containing a lubricant.
17. The closure of claim 1, said closure having at least one thread extending to said top wall.
18. The closure of claim 17, wherein an upper portion of said at least one thread includes a retaining structure extending therefrom.
19. The closure of claim 17, further comprising a container for use with said closure having a container neck finish including a shoulder extending radially inward providing a space of about 3/64 of an inch between said closure and said container neck finish.

20. The closure of claim 1, said inner seal being substantially circular in shape and having a larger diameter than a container neck.
21. A closure for maintaining pressure against a seal affixed to a container lip during a thermal sterilization process, comprising:
 - a closure having a top wall and an annular skirt depending from said top wall;
 - at least one retaining bead extending radially inward from said annular skirt;
 - a reseal structure rotatably disposed above said retaining bead and adjacent said top wall;
 - an inner seal rotatably disposed above said retaining structure and beneath a lower surface of said reseal structure;
 - said reseal structure including a smooth polymeric slip layer affixed to at least one surface thereof.
22. The closure of claim 21, said reseal layer rotatable relative to said closure.
23. The closure of claim 21, said inner seal rotatable relative to said closure.
24. The closure of claim 21, said smooth slip layer formed of a polypropylene.
25. The closure of claim 21, said inner seal being substantially circular in shape and having a larger diameter than a container neck.
26. The closure of claim 25, said inner seal having an overhanging portion extending beyond said container neck diameter.
27. The closure of claim 21, said at least one retaining bead extending circumferentially about an inner surface of said annular skirt.
28. The closure of claim 21, said at least one retaining bead being a plurality of beads extending about an inner surface of said annular skirt.

29. The closure of claim 21, further comprising at least one thread helically extending about an inner surface of said annular skirt.

30. The closure of claim 29, said at least one thread having a driving face extending at an angle of between about 30 and 55 degrees from said inner surface of said annular skirt.

31. The closure of claim 29, said at least one thread having a driving face extending at an angle of about 45 degrees from said inner surface of said annular skirt.

32. The closure of claim 31, said at least one thread having an end point a preselected distance beneath said top wall of said closure.

33. The closure of claim 32, said at least one thread positioned beneath said at least one retaining bead portion.

34. The closure of claim 21, further comprising a stepped portion depending from said top wall.

35. The closure of claim 21, said slip layer in slidable contact with said stepped portion of said closure top wall.

36. The closure of claim 21, said inner seal having a coefficient of friction with the sealing lip of the container greater than a coefficient of friction between said inner seal and said smooth polymeric slip layer.

37. A closure-container combination for maintaining pressure against a seal affixed to a container lip during a sterilization process, comprising:

a container having an upstanding container neck finish;

 said container neck finish having at least one thread helically extending about said neck finish;

 a closure threadably disposed on said container neck finish;

said closure having a top wall and a skirt depending from said top wall;
a retaining structure extending along an inner surface of said closure and defining
a space between said top wall and said retaining structure;
a reseal structure of rubber and synthetic olefin rubber rotatably positioned above
said retaining structure and adjacent said top wall, said reseal structure having a slip layer
of polypropylene material affixed to an upper surface thereof;
an inner seal rotatably positioned above said retaining structure and beneath said
reseal structure;
wherein said inner seal engages a container neck and said inner seal and said
reseal structure stop rotating relative to said container neck.

38. The closure-container combination of claim 37, said inner seal and said reseal
structure arranged to inhibit application of torque to said inner seal during application of
said closure on said container neck finish.

39. The closure-container combination of claim 37, said closure including at least one
thread having an endpoint a preselected distance from said top wall.

40. The closure-container combination of claim 37, said closure having at least one
thread extending to said top wall.

41. The closure-container combination of claim 40 wherein an upper portion of said
thread includes a retaining structure extending therefrom.

42. The closure-container combination of claim 41 wherein said container neck finish
includes a shoulder extending radially inward providing a space of at least about 3/64 of
an inch between said closure and said container neck finish.

43. A closure for maintaining pressure against a seal affixed to a container lip during a sterilization process, comprising:

a closure having a top wall and an annular skirt depending from said top wall;

a retaining structure extending radially inward from an inner surface of said annular skirt;

a reseal structure adjacent said top wall of said closure above said retaining structure; and,

an inner seal positioned above said retaining structure and abutting a lower surface of said reseal structure, said inner seal rotatable relative to said closure.

44. A closure for maintaining pressure against a peelable seal affixed to a container lip during a sterilization process, comprising:

a closure having a top wall and an annular skirt depending from said top wall;

a retaining structure extending radially inward from an inner surface of said annular skirt;

a reseal structure integral with an inner surface of said top wall; and,

an inner seal positioned above said retaining structure and abutting a lower surface of said reseal structure.

45. A closure for maintaining pressure against a peelable seal affixed to a container lip during a sterilization process, comprising:

a closure having a top wall and an annular skirt depending from said top wall;

a retaining structure extending radially inward from an inner surface of said annular skirt;

a reseal structure rotatably positioned above said retaining structure, said reseal structure having a first slip layer on an upper surface and a second slip layer on a lower surface;

an inner seal positioned above said retaining structure and abutting said second slip layer;

said reseal layer rotatable relative to said closure top wall.

46. The closure of claim 45, said reseal liner being compression molded and integral with said closure.

47. A closure for maintaining pressure against a peelable seal affixed to a container lip during a sterilization process, comprising:

a closure having a top wall and an annular skirt depending from said top wall;

a thread extending along an inner surface of the closure skirt and defining a retaining structure;

a reseal liner compression molded into said closure and abutting said top wall;

a slip agent formed integral with said reseal liner;

an inner seal disposed against a lower surface of said reseal liner and above said thread.

48. The closure of claim 47, said inner seal having a slip agent on an upper surface abutting said reseal liner.

49. A closure for maintaining pressure against a peelable seal affixed to a container lip during a sterilization process, comprising:

a closure having a top wall and a skirt depending from said top wall;

at least one retaining structure extending inwardly from said skirt;

a crab claw seal depending from an inner surface of said top wall, said seal having a slip agent formed integral therewith;

 said crab claw abutting an inner seal disposed above said retaining structure and beneath said crab claw seal.

50. The closure of claim 49, said inner seal having a slip agent integral therewith.

51. The closure of claim 49, said inner seal having a slip layer adjacent said crab claw seal.

52. The closure of claim 49, further comprising a container neck having a jumped thread design for use with said closure.

53. A closure for maintaining pressure against a peelable seal affixed to a container lip during a sterilization process, comprising:

 a closure having a top wall and a skirt depending from said top wall;

 a plug seal depending from said top wall;

 a reseal liner extending about the outer circumference of said plug seal;

 at least one retaining structure beneath said reseal liner;

 an inner seal disposed beneath said reseal liner and above said retaining structure;

 said reseal liner and inner seal having a coefficient of friction less than said inner seal and a container neck.